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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER				
SMITH, COURTNEY L				
ART UNIT		PAPER NUMBER		
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/567,179

**Applicant(s)**

SPEIER, INGO

**Examiner**

COURTNEY SMITH

**Art Unit**

2835

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 November 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 March 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-940)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. **Claims 1-7, 10-15**, are rejected under 35 U.S.C. 102(e) as being anticipated by **(Schick 2006/0261470)**.

The applied reference has a common assignee with the instant application.

Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

**Regarding Claim 1**, Schick discloses a thermally and electrically conductive apparatus (**Fig. 4**) to which one or more electronic devices (**412**) can be operatively connected, the apparatus comprising: a) a thermally conductive element (**416**---**Detailed Description 0059**) in thermal contact with the one or more electronic devices; and b) a multilayer coating system including three or more layers (**Detailed Description 0040 & 0050**---**where the evaporator portion is coated with dielectric, and wherein dielectric**

**coating is patterned to provide electrical traces with current for the electrical device; Detailed Description 0042 & 0044 further discloses primary and secondary LED's that constitutes two electrical trace layers isolated by at least one electrically insulating dielectric), said three or more layers being a sequence of electrically insulating and electrically conductive layers integrally formed on a portion of the thermally conductive element (as already set forth by Detailed Description 0040--evaporator portion coated with dielectric), said electrically conductive layers providing one or more paths for supplying electric current to the one or more electronic devices (Detailed Description 0040--traces for current supply to the devices; and 0059--where operative connection to a control system controlling the activation of the electronic devices).**

**Regarding Claim 2, Schick** discloses the thermally and electrically conductive apparatus (**Fig. 4**) according to claim 1, wherein one or more of the layers, of the multilayer coating system include circuit traces for connection of the one or more electronic devices thereto, thereby providing a means for controlling the one or more electronic devices individually or in one or more groups of electronic devices (**as already set forth in claim 1**).

**Regarding Claim 3, Schick** discloses the thermally and electrically conductive apparatus (**Fig. 4**) according to claim 1, wherein the thermally conductive element is electrically conductive and thereby capable of providing a path for supplying electric

current to the one or more electronic devices **(as disclosed by Detailed Description 0040--where the evaporator portion is coated with dielectric material patterned to provide electrical traces for the supply of electrical current to the devices).**

**Regarding Claim 4, Schick** discloses the thermally and electrically conductive apparatus **(Fig. 4)** according to claim 1, wherein one or more of the three or more layers of the multilayer coating system are formed by deposition **(as already set forth in Detailed Description 0050)**. **Note:** 'deposition' is a method of manufacture and is not structurally distinguished from the prior art, and thus the prior art is a fully functional equivalent to the claimed structure as evidenced by meeting all of the claimed structural limitations thereof.

**Regarding Claim 5, Schick** discloses the thermally and electrically conductive apparatus **(Fig. 4)** according to claim 1, wherein the apparatus is coupled to a support structure **(support--as disclosed by Detailed Description 0032)** comprising a circuit carrier **(carrier---as disclosed by Detailed Description 0048).**

**Regarding Claim 6, Schick** discloses the thermally and electrically conductive apparatus **(Fig. 4)** according to claim 5, wherein the multilayer coating system is configured to matingly connect with the circuit carrier **(mating connection already set forth by Detailed Description 0032)**, thereby providing one or more electrical connections between the support structure and the thermally and electrically conductive

apparatus (**Detailed Description 0032**—where the already disclosed thermally conductive element has an external support with means for mating a secondary portion, which already constitutes electrical connectivity, as already disclosed by **Detailed Description 0040**).

**Regarding Claim 7, Schick** discloses the thermally and electrically conductive apparatus (**Fig. 4**) according to claim 6, wherein the thermally and electrically conductive apparatus is permanently connected to the support structure (**where the permanent connection is constituted by solder**—**Detailed Description 0067**). **Note: ‘permanent connection’ features are not asserted.**

**Regarding Claim 10, Schick** discloses the thermally and electrically conductive apparatus (**Fig. 4**) according to claim 5, wherein the support structure includes a heat dissipation system (**as disclosed by Detailed Description 0059-0060**—where the already disclosed support structure is comprised of a thermal management system and is a heat pipe, and 0029 further discloses a peltier device).

**Regarding Claim 11, Schick** discloses the thermally and electrically conductive apparatus (**Fig. 4**) according to claim 1, wherein the multilayer coating system is formed on an end of the thermally conductive element (**as set forth by Fig. 4, where the coating system is on an outer periphery of the thermally conductive element**).

**Regarding Claim 12, Schick** discloses the thermally and electrically conductive apparatus (**Fig. 4**) according to claim 1, wherein the multilayer coating system is formed on a side of the thermally conductive element (**as set forth by Fig. 4, where the coating system is on an outer periphery of the thermally conductive element**)..

**Regarding Claim 13, Schick** discloses the thermally and electrically conductive apparatus (**Fig. 4**) according to claim 1, wherein the multilayer coating system sheaths at least a portion of the thermally conductive element (**as set forth by Detailed Description 0040, where the thermally conductive element is coated by the layers**).

**Regarding Claim 14, Schick** discloses the thermally and electrically conductive apparatus (**Fig. 4**) according to claim 1, wherein the thermally conductive element is a passive thermal device selected from the group comprising heat pipe (**as disclosed by Detailed Description 0059-0060---where the thermally conductive element is a heat pipe, and further disclosed by 0029**).

**Regarding Claim 15, Schick** discloses the thermally and electrically conductive apparatus (**Fig. 4**) according to claim 1, wherein the thermally conductive element is an active thermal device selected from the group comprising thermoelectric cooler (**as disclosed by Detailed Description 0029---where the thermally conductive device is a peltier device**).

3. **Claims 8-9, and 16-18**, are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over **(Schick 2006/0261470)**.

**Regarding Claim 8, Schick** discloses the thermally and electrically conductive apparatus **(as disclosed by Detailed Description 0040)** according to claim 6, **except**, explicitly wherein the thermally and electrically conductive apparatus is removably connected to the support structure. However, **Schick--(Detailed Description 0067 discloses individual partitions of the apparatus can be affixed by being screwed or bolted, which constitutes a removeable connection)** the thermally and electrically conductive apparatus is removably connected to the support structure. It would have been obvious to one having ordinary skill in the art at the time that the invention was made to provide the already disclosed apparatus of Schick with the removably connected apparatus of Schick-Detailed Disruption 0067 in order to reduce labor during maintenance of the apparatus, and further to allow for design flexibility in accordance to thermal management needs.

**Regarding Claim 9, Schick** discloses a thermally and electrically conductive apparatus **(Fig. 4)** according to claim 5, the thermally and electrically conductive apparatus **(as already set forth)**, **except** explicitly wherein the thermally and electrically conductive apparatus is embedded within the support structure. However, **Schick** discloses apparatus 616-Fig. 6 is embedded within support structure **(where 616 is embedded in aperture 628 or support structure 622)**. It would have been obvious to one having



ordinary skill in the art at the time that the invention was made to provide the already disclosed apparatus of Schick with the embedded apparatus of Schick- in order to allow for effective thermal coupling to enhance the transfer of heat away from the electrical device.

**Regarding Claims 16-18, Schick** discloses the thermally and electrically conductive apparatus (**Fig. 4**) according to claim 1, wherein the thermally conductive element has a shape of a curved element/cylinder/curvilinear (**as depicted b y Fig. 4, and otherwise set forth by Detailed Description 0060, where the thermally conductive element is formed into a hole**), and thus it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the thermally conductive element of Schick in shape of a curved element/cylinder/curvilinear, since the examiner takes Official Notice of the equivalence of the shape constituted by the thermally conductive element formed in the hole, as set forth at 0060 and the above mentioned shapes for their use art of cooling electrical components and the selection of any of these known equivalents to accomplish a desired heat transfer would be within the level of ordinary skill in the art.

### ***Response to Arguments***

3. Applicant's arguments filed 11/30/10 have been fully considered but they are not persuasive. Regarding Claim 1; the applicant argues on page(s) 2-3 that 'the prior art

fails to disclose the multilayer coating system comprising three or more layers being a sequence of electrically insulating and electrically conductive layers integrally formed on a portion of the thermally conductive element. The Examiner respectfully disagrees. It is to be noted that Detailed Description 0040 explicitly discloses a dielectric material patterned with electrical traces coating a evaporator portion (thermally conductive element--416-Fig. 4) and thus the applicant shall hereby be without doubt that a an electrically insulating dielectric material patterned with electrical trace(s) constitutes a multilayer coating of at least three layers. The Examiner hereby contends that the issue of a sequence is seemingly the applicant concern. A sequence does not solely consist of alternating layers or any particular pattern unless it is claimed as such. The applicant only and simply asserts the coating comprising three or more layers being a sequence of electrically insulating and electrically conductive layers. As such no particular pattern or sequence is defined but rather only that a sequence comprises three or more insulating and conductive layers. In any case the prior art discloses a like sequence as above argued and/or a coating comprising electrically conductive trace layer(s) isolated by a dielectric as further disclosed by Detailed Description 0050; which constitutes electrically insulating dielectric material being between each electrically conductive trace layer to satisfy a three layer sequence. Each sequence set forth by the Examiner in the prior art reads on the applicants claim, as asserted and thus the applicant has failed to distinguish the claim from the prior art.

***Conclusion***

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to COURTNEY SMITH whose telephone number is (571)272-9094. The examiner can normally be reached on M-F 7:30 am-5 pm (1st Fri. off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jayprakash Gandhi can be reached on 571-272-3740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/C. S./

Examiner, Art Unit 2835

/Jayprakash N Gandhi/

Supervisory Patent Examiner, Art Unit 2835